

**What is Claimed is:**

- 1 1. A fusion protein comprising:
  - 2 a) a polypeptide comprising a reporter amino acid sequence;
  - 3 b) a second polypeptide fused to said reporter amino acid sequence;
  - 4 and
  - 5 c) a leader sequence fused to a terminus of said fusion protein.
- 1 2. The fusion protein of claim 1, wherein said polypeptide is a somatostatin  
2 receptor polypeptide.
- 1 3. The fusion protein of claim 1, wherein said polypeptide is a somatostatin type 2  
2 receptor polypeptide.
- 1 4. The fusion protein of claim 1, wherein said polypeptide is a mutant human  
2 somatostatin receptor in which all or part of the cytoplasmic tail has been deleted.
- 1 5. The fusion protein of claim 4, wherein said polypeptide is a mutant human  
2 somatostatin receptor in which the portion of the cytoplasmic tail C-terminal to amino  
3 acid 314 has been deleted.
- 1 6. The fusion protein of claim 1, wherein said second polypeptide is a protein  
2 fusion tag.
- 1 7. The fusion protein of claim 6, wherein said second polypeptide is hemagglutinin  
2 A.
- 1 8. The polypeptide of claim 1, wherein said leader sequence is the Igκ leader  
2 sequence.
- 1 9. The polypeptide of claim 3, wherein said leader sequence is the Igκ leader  
2 sequence.
- 1 10. An isolated nucleic acid encoding the fusion protein of claim 1.

- 1 11. An expression vector comprising the nucleic acid of claim 10, operably linked  
2 to a promoter.
- 1 12. A host cell transformed with the vector of claim 11.
- 1 13. An isolated nucleic acid encoding the fusion protein of claim 6.
- 1 14. An expression vector comprising the nucleic acid of claim 13, operably linked  
2 to a promoter.
- 1 15. A host cell transformed with the vector of claim 14.
- 1 16. A method of assaying for the expression of a fusion protein comprising:  
2 a) transferring a gene into a host cell with an expression vector  
3 according to claim 10; and  
4 b) assaying expression based upon the chemical, physical or biological  
5 properties of said fusion protein.
- 1 17. The method of claim 16, wherein the gene transfer takes place *in vivo*.
- 1 18. The method of claim 16, wherein the expression of said vector is assayed by  
2 contacting said host cell with a ligand that binds with specificity to a somatostatin  
3 receptor, or mutated somatostatin receptor, and wherein said ligand has been detectably  
4 labeled.
- 1 19. The method of claim 16, wherein the expression of said vector is assayed by  
2 contacting said host cell with a ligand that binds with specificity to a somatostatin type  
3 2 receptor, or mutated somatostatin type 2 receptor, and wherein said ligand has been  
4 detectably labeled.
- 1 20. The method of claim 18, wherein said ligand is radioactively labeled  
2 somatostatin analog.
- 3 21. The method of claim 18, wherein said ligand is radioactively labeled octreotide.

1 22. The method of claim 16, wherein the expression of said vector is assayed by  
2 contacting said host cell with an antibody that binds with specificity to said fusion  
3 protein.

1 23. The method of claim 20, wherein said antibody binds with specificity to  
2 hemagglutinin A.

1 24. The method of claim 16, wherein said the expression of said vector is assayed  
2 based upon the enzymatic activity of said fusion protein.

1 25. The method of claim 24, wherein said enzymatic activity is chloramphenicol  
2 acetyl transferase activity.

1 26. A DNA construct comprising segments encoding:

- 2 a) a reporter protein; and  
3 b) a second polypeptide fused to said receptor, wherein said second  
4 polypeptide provides a tag for independently quantitating the  
5 expression of said fusion protein.

1 27. The DNA construct of claim 26, wherein said reporter protein is a receptor.

1 28. The DNA construct of claim 26, further comprising: a leader sequence  
2 fused to either said reporter or said second polypeptide.

1 29. The DNA construct of claim 27, wherein said receptor is a somatostatin type 2  
2 receptor or the somatostatin type 2 receptor in which one or more mutations have been  
3 introduced.

1 30. The DNA construct of any one of claim 28, wherein said second polypeptide is  
2 tag.

1 31. A method of assaying the ability of a mutated receptor to bind a ligand  
2 comprising:

- 3 a) transfecting a cell with the DNA construct of claim 28 wherein said  
4 DNA construct encodes said mutated receptor or other reporter;  
5 b) quantitating expression of the fusion protein by assaying a signal derived  
6 from a reporter or a detectably labeled ligand to said receptor or other  
7 reporter; and  
8 c) normalizing the value determined in step b) by quantitating expression  
9 of the fusion protein encoded by said DNA construct using said second  
10 polypeptide.

1 32. The method of claim 31, wherein said mutated receptor is the somatostatin type  
2 2 receptor in which one or more mutations have been introduced.

1 33. The method of claim 31, wherein the second polypeptide in said DNA construct  
2 is a tag.

1 34. An imaging method comprising detecting the expression of somatostatin fusion  
2 protein *in vivo*.

1 35. The method of claim 34, wherein the somatostatin fusion protein comprises a  
2 carboxy terminal mutation.

1 36. The method of claim 35, wherein the carboxy terminal mutation comprises the  
2 deletion of amino acids beyond amino acid 314.